APTIQUEST : DAILY APTITUDE CHALLENGER

A MINI-PROJECT REPORT

Submitted By

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BONAFIDE CERTIFICATE

Certified that this project report **"APTIQUEST : DAILY APTITUDE CHALLENGER "** is the Bonafide work of **"DEEPIKA P (2116220701058)"** who carried out the project work for the subject OAI1903-Introduction toRobotic Process Automation under my supervision.

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INTERNAL EXAMINER **EXTERNAL EXAMINER**

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ABSTRACT

"AptiQuest: Daily Aptitude Challenger" is an innovative Robotic Process Automation (RPA) project designed using UiPath Studio to automate daily aptitude practice for students. The bot engages users by prompting them to select an aptitude category, such as Arithmetic Aptitude, Logical Reasoning, or Data Interpretation, through an interactive input dialog. Based on the user's choice, the bot navigates to a reputed source like Indiabix.com, extracts relevant questions using data scraping techniques, and compiles them into a structured text file. This file is then sent to the user's email, accompanied by a personalized message, ensuring they receive daily challenges effortlessly.

By automating the generation and delivery of practice questions, AptiQuest addresses the common student concern of lacking self-motivation for consistent practice. The project leverages web scraping, file handling, and email integration to streamline the preparation process. AptiQuest not only encourages students to hone their aptitude skills but also provides a scalable foundation for future enhancements, such as gamification and personalized progress tracking, making it a powerful tool for interview readiness and competitive exam preparation.

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LIST OF ABBREVATIONS:

Abbreviation	Full Form
RPA	**Robotic Process Automation**
PDF	**Portable Document Format**
SMTP	**Simple Mail Transfer Protocol**
UI	**User Interface**
HTTP	**HyperText Transfer Protocol**
XML	**eXtensible Markup Language**
RE Framework	**Robotic Enterprise Framework**

CHAPTER - 1
INTRODUCTION

The daily practice of aptitude is vital for interview and exam preparation but often overlooked due to a lack of motivation. **"AptiQuest: Daily Aptitude Challenge"** leverages Robotic Process Automation (RPA) with UiPath Studio to automate this process. The bot prompts users to select an aptitude category, extracts questions from reputable sources, compiles them into a text file, and emails it to the user. This ensures consistent, efficient, and engaging preparation, streamlining aptitude practice for students aiming to excel.

1.1 GENERAL

Daily aptitude practice is essential but often hindered by inconsistent motivation and effort. RPA can transform this process by automating question selection, data compilation, and email distribution. By streamlining these repetitive tasks, AptiQuest ensures students receive curated challenges daily without manual intervention. This efficient system fosters consistency, reduces preparation delays, and enhances scalability, freeing students to focus on mastering problem-solving skills and achieving their career goals.

1.2 OBJECTIVE

The objective of this project is to automate the **Student Course Registration process** using **Robotic Process Automation (RPA)**. The goal is to streamline data collection through **Manual** and **Excel Input** methods, reduce human errors, and increase efficiency by automatically generating and sending Word documents and PDFs via email. This automation ensures accuracy, enhances the user experience for both students and administrators, and allows administrative staff to focus on more critical tasks

1.3 EXISTING SYSTEM

In the current preparation landscape, daily aptitude practice is often left to individual effort, which can be inconsistent and inefficient. Students typically rely on manual methods, such as searching for questions online or using printed books, to practice aptitude. This approach can be time-consuming, as it involves navigating multiple sources and manually organizing materials. Moreover, the lack of regular motivation often results in skipped

practice sessions. The absence of an automated system to streamline question selection, compilation, and delivery highlights the need for an efficient solution that ensures consistency, saves time, and enhances the preparation process.

1.4 PROPOSED SYSTEM

The “AptiQuest Daily Aptitude Challenge Bot” is designed to address the inconsistencies and inefficiencies in daily aptitude practice. Utilizing UiPath's Robotic Process Automation (RPA) capabilities, this bot automates the entire workflow, from selecting aptitude categories to extracting relevant questions and delivering them to users. The system allows users to choose their preferred category, navigates to a trusted source like Indiabix, extracts curated questions, and compiles them into a structured text file. This file is then emailed to users with a motivational message. By eliminating the manual effort of searching and organizing questions, AptiQuest ensures consistency in practice, improves time management, and fosters skill enhancement. This automated solution encourages students to maintain a regular learning schedule and enhances their aptitude preparation for competitive exams and interviews.

CHAPTER - 2
LITERATURE REVIEW

2.1 GENERAL

Automation technologies have become pivotal across industries, especially in education and skill development. Daily aptitude practice plays a vital role in preparing students and professionals for competitive exams and interviews. However, manually curating practice materials is time-intensive and prone to inefficiencies. Research shows that automation can reduce repetitive manual tasks by up to 60%, ensuring consistent preparation while saving time.

UiPath Robotic Process Automation (RPA) platform offers robust solutions for automating structured workflows like data extraction, processing, and communication. By leveraging UiPath's features such as data scraping, table extraction, and automated email delivery, AptiQuest streamlines the process of delivering tailored aptitude challenges to users. This project addresses key inefficiencies in manual question compilation by automating the end-to-end process, from extracting relevant aptitude questions to compiling and emailing them.

Studies indicate that consistent practice improves aptitude and reasoning skills, which are critical for employability. Automation tools enhance this by delivering timely, error-free practice materials, improving learner engagement and outcomes. Automation also allows for scalability, enabling the delivery of large-scale solutions for daily challenges without increasing operational complexity.

By integrating these advantages, AptiQuest ensures a seamless and personalized learning experience, reducing the cognitive load of searching for questions and promoting skill enhancement through systematic practice. This innovative approach aligns with the growing demand for digital and automated learning solutions in the competitive education sector.

CHAPTER – 3

SYSTEM DESIGN

3.1.1 SYSTEM FLOW DIAGRAM

The System Flow Diagram outlines the overall flow of data and processes in the system. It demonstrates how user inputs, system processing, and outputs interact.

Description:

1. **Input**: The process begins with the user selecting a topic for aptitude questions via a prompt dialog.
2. **Process**:
   - The bot navigates to the corresponding web-page based on the selected topic.
   - The bot scrapes aptitude questions from the Indiabix website, extracting relevant data (questions and answers) using UiPath's data extraction activities.
   - The extracted data is stored in a Data Table variable and processed for formatting.
   - The questions are saved as a '.txt' file on the local system.
3. **Output**: The `.txt` file containing the selected aptitude questions is emailed to the user as an attachment, accompanied by a brief message highlighting the practice session.

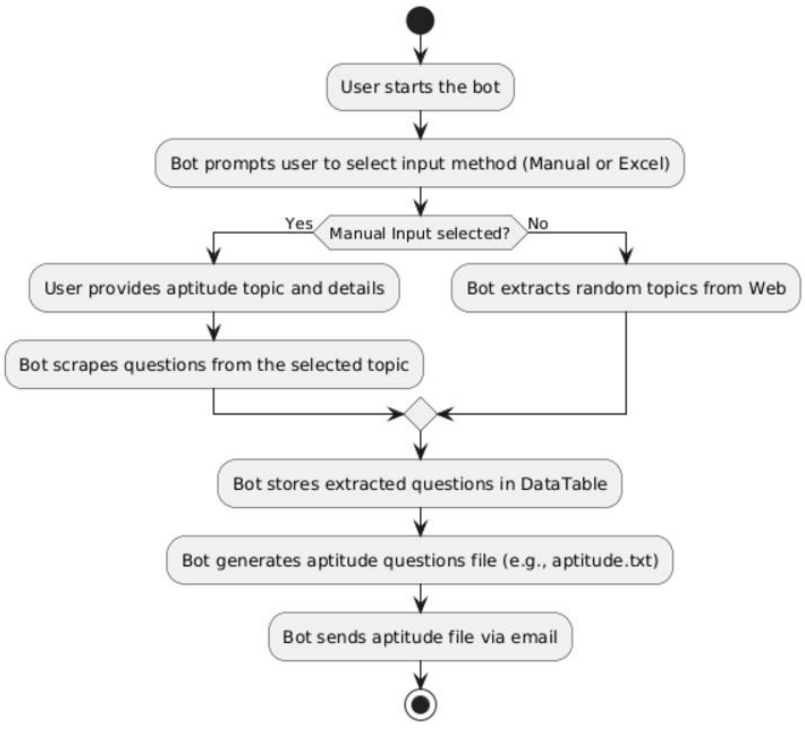

Figure 3.1.1 SYSTEM FLOW DIAGRAM

3.1.2 ARCHITECTURE DIAGRAM

The Architecture Diagram provides a high-level view of the system's structure and its components.

Components:

1. **Frontend**: User Input via Dialog Box.
2. **Backend**: Workflows for data extraction, formatting questions text file generation and sending emails.
3. **External Resources**: Indiabix Website, Local File System (Aptitude.txt), and Email Server.

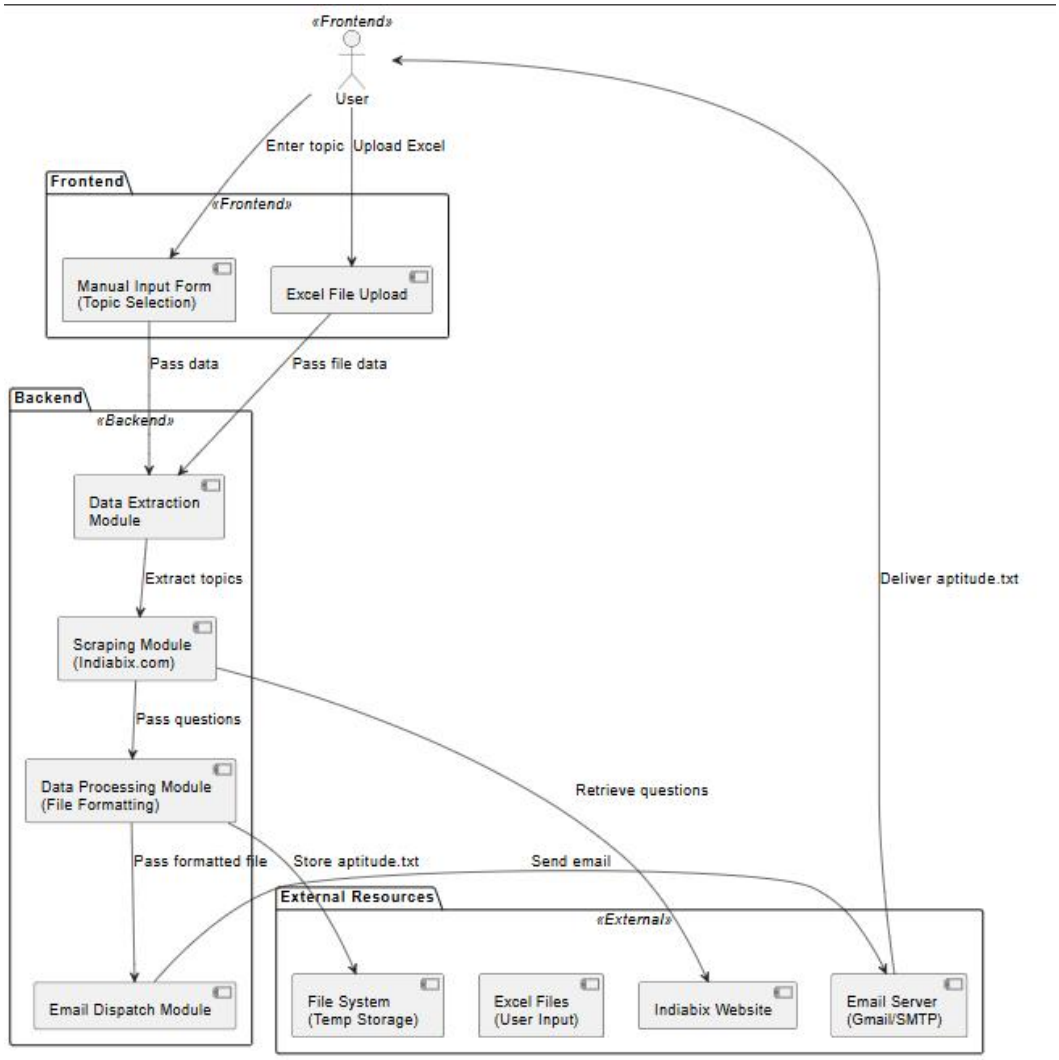

Figure 3.1.2 ARCHITECTURE DIAGRAM

3.1.3 SEQUENCE DIAGRAM

The Sequence Diagram shows the interaction between actors (Students) and the system components in a sequential manner.

Steps :

1. The user **selects** the aptitude topic from the **dialog box.**
2. The bot **navigates** to the respective **Indiabix** web-page.
3. **Extracts** questions from the page into a **Data Table**.
4. **Formats** the extracted data into a **text file**.
5. Saves the file locally (**Aptitude.txt**).
6. **Sends** the file via **email** to the user.

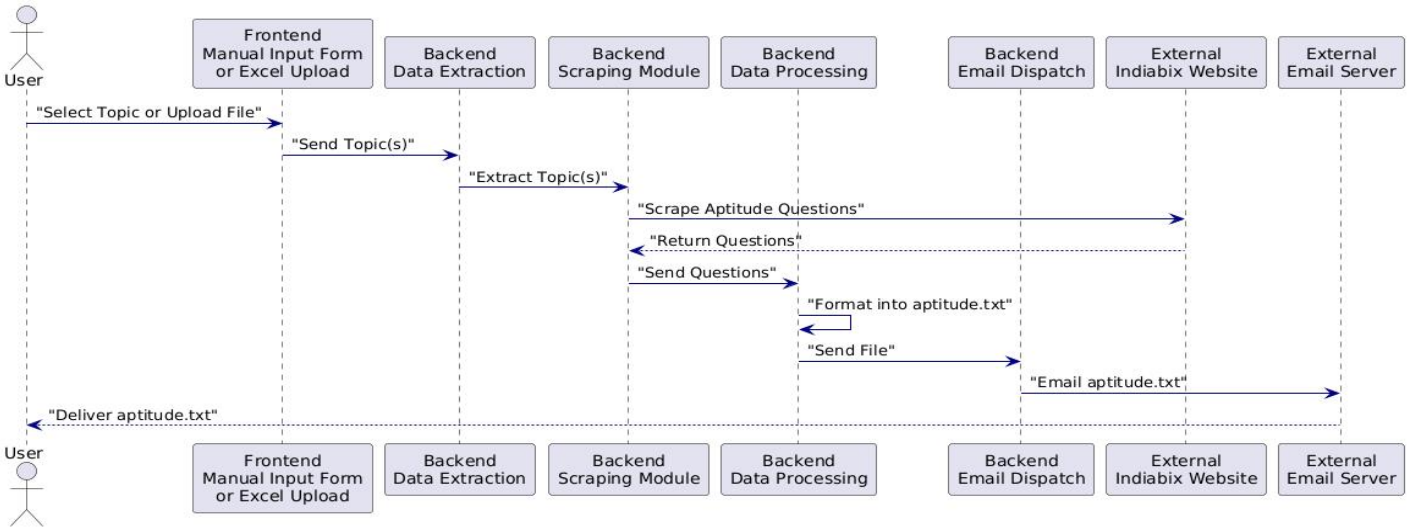

Figure 3.1.3 SEQUENCE DIAGRAM

CHAPTER – 4

PROJECT DESCRIPTION

The **AptiQuest: Daily Aptitude Challenger** is a Robotic Process Automation (RPA) system built with UiPath to simplify daily aptitude practice for students. The bot generates 5-10 random aptitude questions from reputable sources like Indiabix, based on the user-selected topic. It extracts the questions, formats them into a text file, and sends the file to the user's email. By automating question retrieval, formatting, and email delivery, AptiQuest minimizes manual effort and ensures consistent access to high-quality aptitude material, enhancing students' preparation for competitive exams.

4.1 METHODOLOGIES

The **AptiQuest: Daily Aptitude Challenger** project follows a streamlined approach to automating the process of generating and distributing daily aptitude questions. Using UiPath's Robotic Process Automation (RPA) capabilities, the system retrieves random questions from trusted sources like Indiabix, based on the user's chosen topic. The questions are formatted into a text file, which is then sent to the user's email. This methodology ensures minimal manual intervention, enhances the accuracy of the content, and supports a scalable solution for students to consistently practice aptitude for exam preparation.

The key steps in the methodology are:

1. **Requirement Gathering**: First, we identified what was needed for the project, such as details to be collected from user input method, the type of questions to be generated (based on topics like Arithmetic, Data Interpretation), and how the questions would be formatted and sent via email.
2. **System Design**: The system architecture was then designed, which included specifying the workflow for extracting aptitude questions from Indiabix, formatting them into a text file, and automatically sending them to the user's email.
3. **Implementation**: Using UiPath, we created the RPA bot that fetches questions from the chosen source, processes the data, formats it into a text file, and emails it to the user. The RE Framework was incorporated for error handling and smooth execution.
4. **Testing & Deployment**: After building the system, we tested it to make sure it worked as expected. Once confirmed, it was deployed for real use.

4.1.1 MODULES:

1.User Input Handling Module: This module allows users to select the input method (Manual or Excel) for generating aptitude questions. It collects the user's choice and processes accordingly.

2.Excel Data Extraction Module: This module extracts aptitude questions from an Excel file provided by the user. It handles the reading of questions and related data, which is then formatted for email distribution.

3. Question Generation and Formatting Module: This module fetches the relevant aptitude questions based on the selected input method, formats them, and prepares them for inclusion in the final text file.

4. Text File Generation Module: This module takes the formatted questions and stores them in a text file, ready to be sent to the user.

5.Email Distribution Module: Once the questions are formatted and stored, this module automatically sends the generated text file to the user’s email, ensuring timely delivery.

6. Logging and Monitoring Module: This module tracks the process flow, logs every action performed by the bot, and monitors its performance. It ensures that users are notified of successful or failed operations.

7. Error Handling and Exception Management Module: This module catches any errors during the process, such as failed email delivery or missing data, and ensures the system continues running smoothly by handling exceptions appropriately.

8. User Interface Module: This module provides a simple and intuitive interface for users to choose the input method (Manual or Excel), trigger the bot, and receive updates about the process.

CHAPTER – 5

OUTPUT SCREENSHOTS

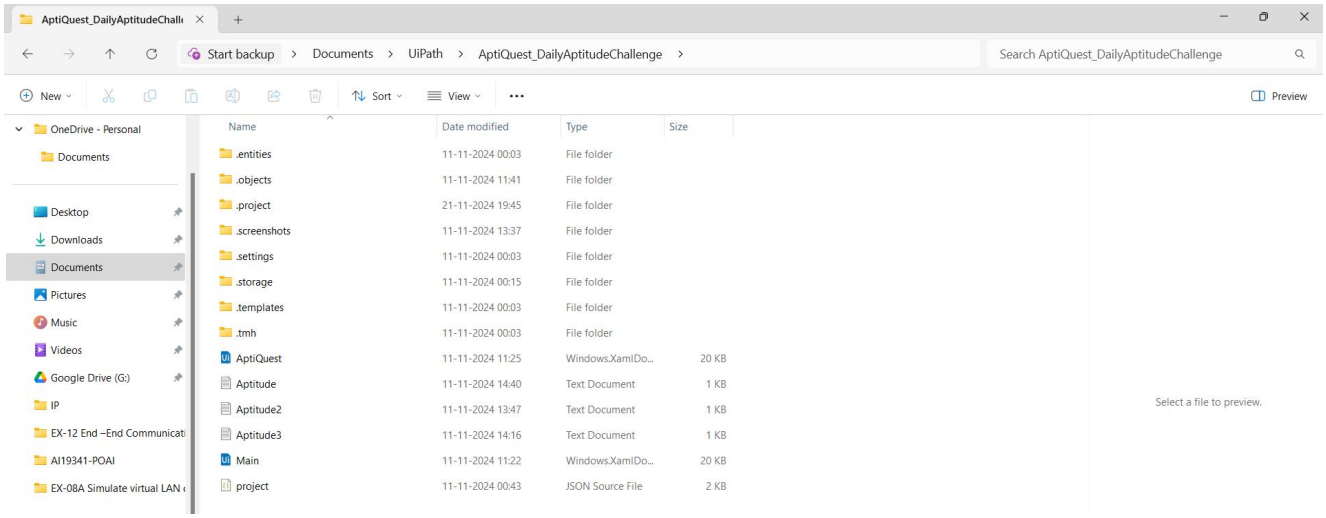

Figure 5.1 SELECTED FOLDER CONTAINING INPUT FILES

The selected folder contains all the required input files, as shown in **Fig. 5.1**.

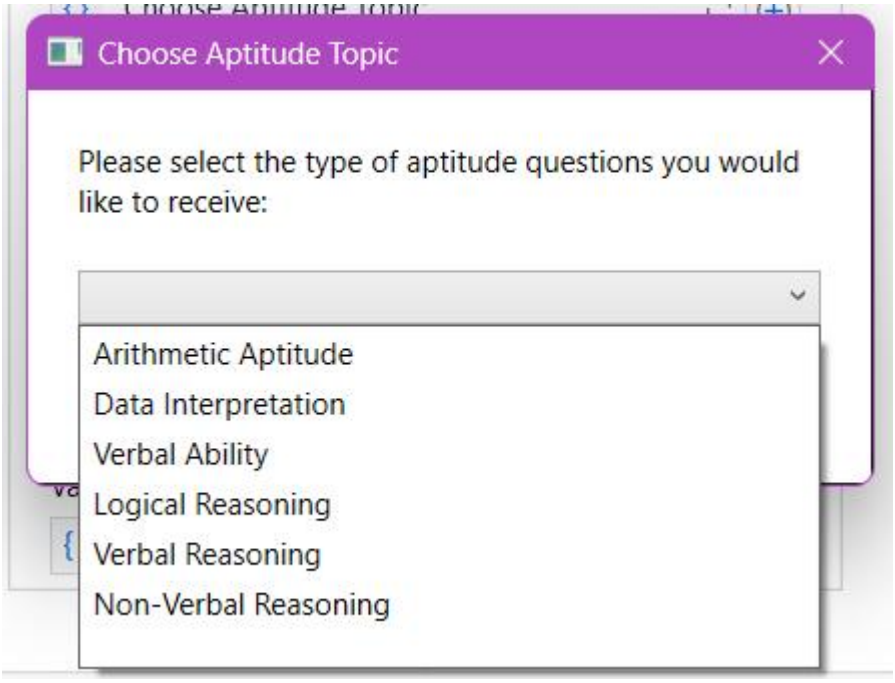

Figure 5.2 INPUT MODE SELECTION INTERFACE

This interface allows the user to choose the input mode such as various topics as shown in **Fig. 5.2.**

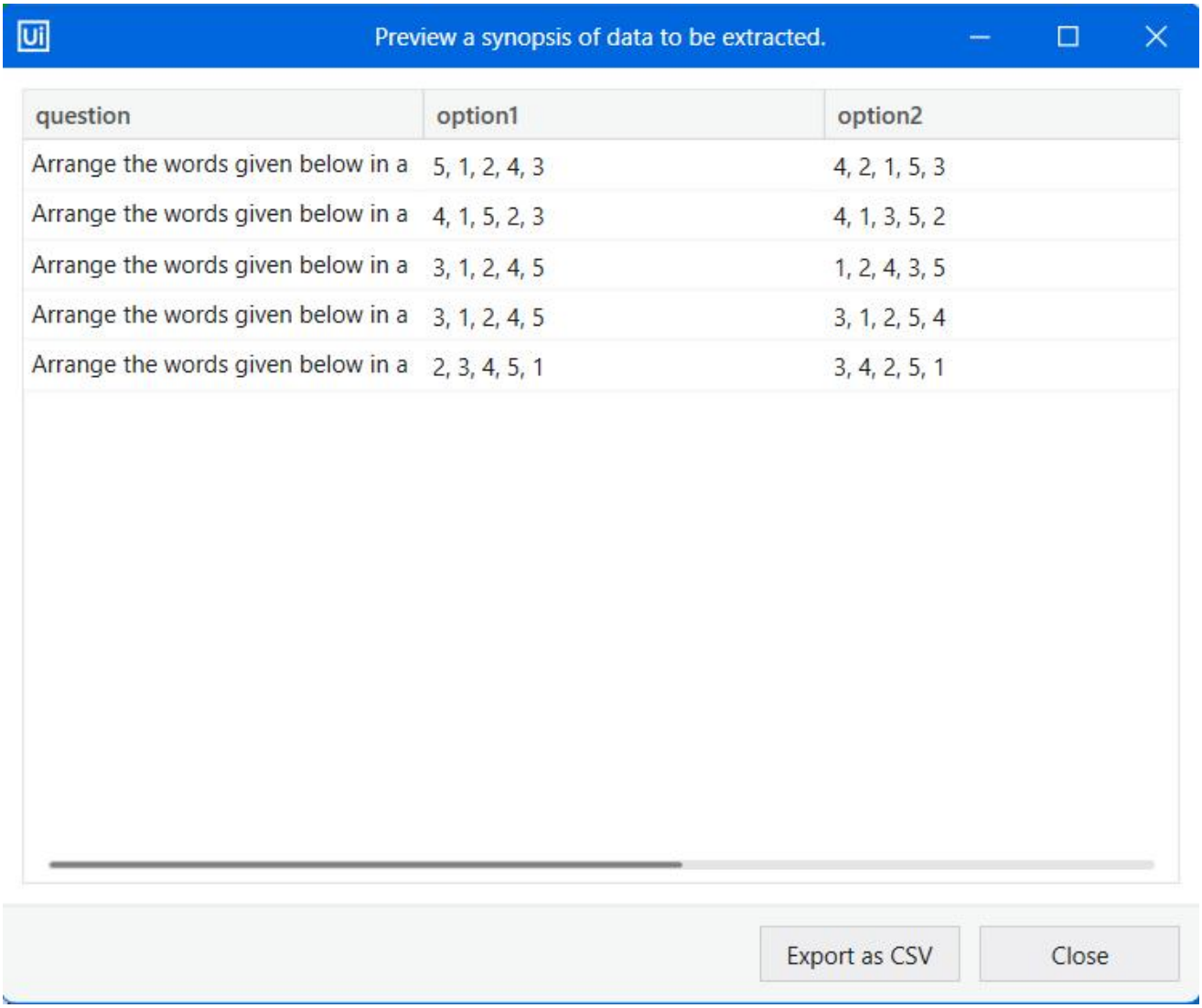

Figure 5.3 EXTRACTED TABLE DATA

This is the preview synopsis of data to be extracted as shown in **Fig. 5.3.**

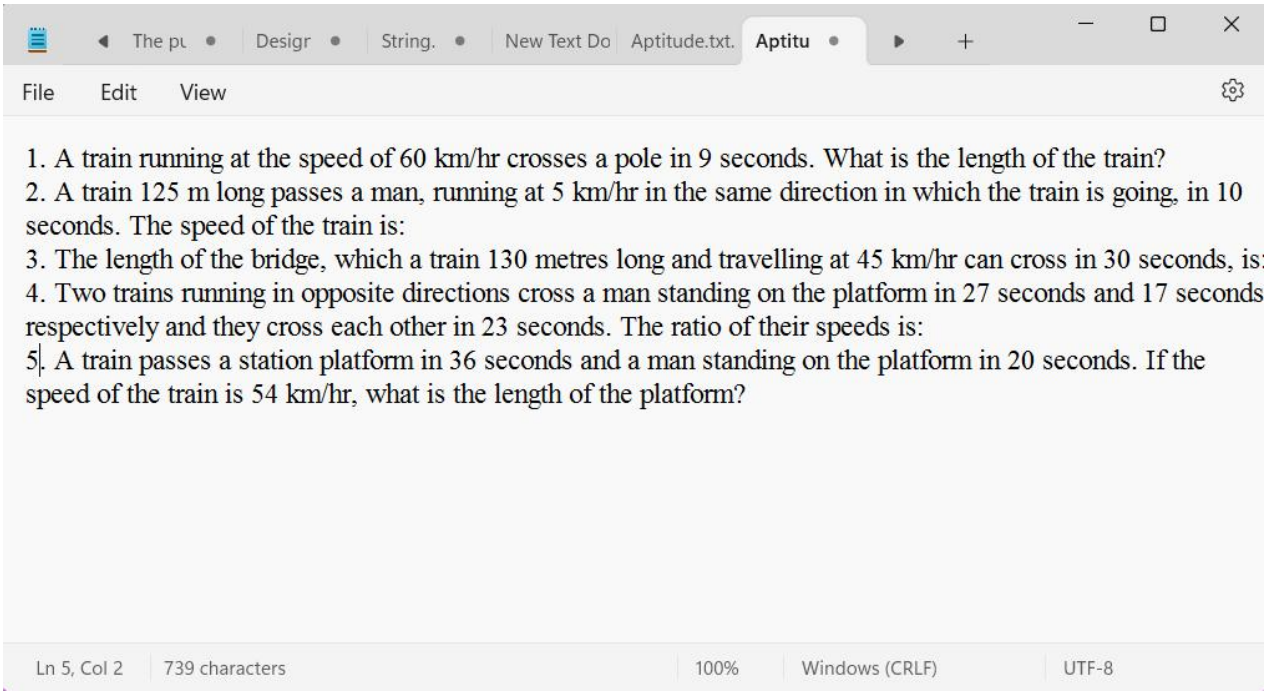

Figure 5.4 FORMATTED APTITUDE TEXT FILE

The extracted aptitude questions are stored in aptitude.txt file as shown in **Fig. 5.4.**

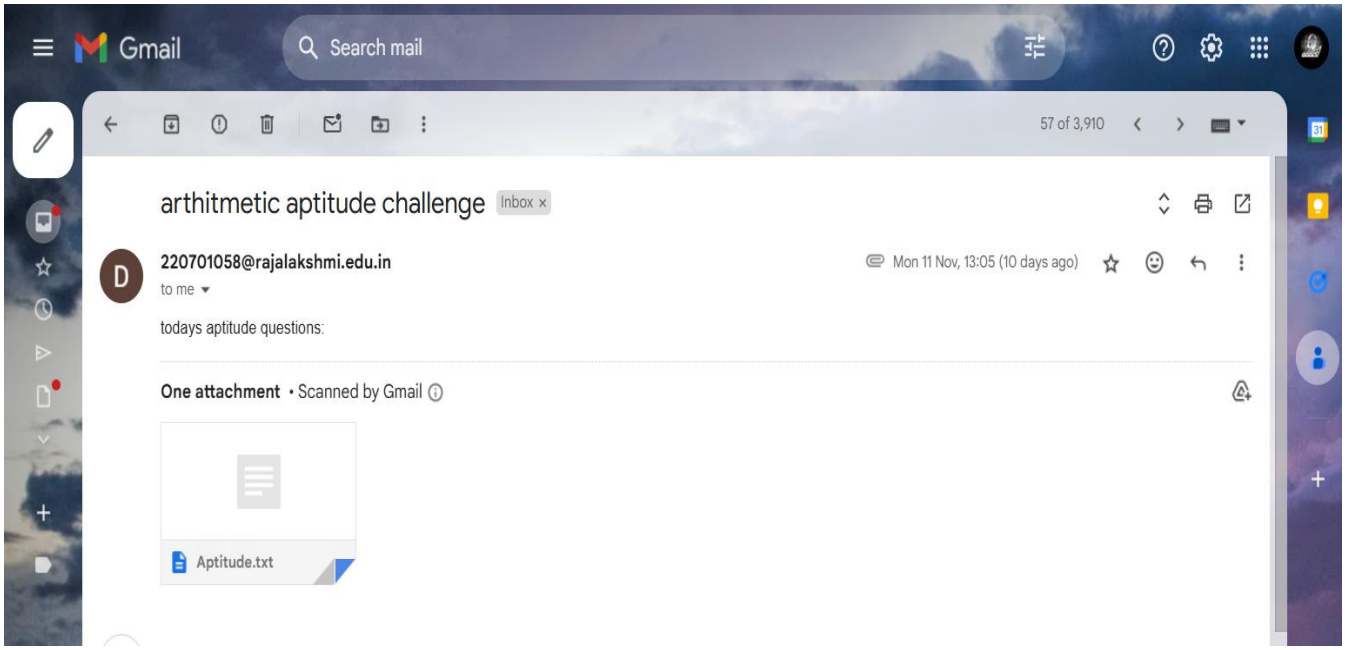

Figure 5.6 Txt File sent via Gmail

This screenshot shows the Gmail interface displaying the email sent to the recipient with the generated TXT attached.

CHAPTER – 6

CONCLUSIONS

6.1 GENERAL

The **AptiQuest: Daily Aptitude Challenge Automation Bo**t optimizes the process of generating and sending personalized aptitude questions by automating the creation of question files. Using UiPath's Robotic Process Automation (RPA), the system processes input data, whether from manual entries or Excel files, formats the questions, and automatically sends them via email. This automation reduces the time and effort required to manually manage and distribute questions, ensuring that students receive their daily challenge on time.

By automating repetitive tasks, the project enhances efficiency and accuracy in delivering personalized content. The ability to handle varying datasets and send customized emails ensures scalability for educational institutions and organizations providing aptitude practice. The bot significantly improves administrative workflows, allowing staff to focus on more critical tasks, thus boosting productivity.

While the system offers substantial improvements in operational efficiency, challenges may arise in managing data inconsistencies or unstructured input. Future updates to ensure compatibility with evolving data formats and improve error handling will be essential. Nonetheless, this project demonstrates the power of RPA in transforming traditional educational processes and highlights its potential to streamline routine administrative tasks, reducing human error and fostering innovation in educational technology.

APPENDICES

Appendix 1: Key Code Snippets

This appendix provides code snippets for essential functionalities, including:

1. Reading student' choice from the Dialog.
2. Storing the Extracted Values in the Data table.
3. Sending Aptitude questions via email.

Appendix 2: Process Overview

This appendix includes a process overview diagram generated by UiPath, illustrating:

1. The workflow for manual input and Table Extraction
2. The dynamic insertion of Questions in Text File.
3. Automation of Question generation and email dispatch.

Appendix 3: Testing Logs

This appendix contains records of the testing process, detailing:

1. Test Case IDs: Unique identifiers for test scenarios.
2. Test Steps: Description of steps performed during the testing.
3. Expected vs. Actual Results: A comparison of predicted outcomes and observed results.
4. Notes: Identified issues, troubleshooting steps, and resolutions.

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